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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,021	04/12/2004	Pavel Tsinberg	81721 (6776)	3360
22242	7590	07/19/2006	EXAMINER	
FITCH EVEN TABIN AND FLANNERY 120 SOUTH LA SALLE STREET SUITE 1600 CHICAGO, IL 60603-3406			FORMAN, BETTY J	
			ART UNIT	PAPER NUMBER
			1634	

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/823,021

Applicant(s)

TSINBERG ET AL.

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 21 is/are rejected.
- 7) ☒ Claim(s) 2-3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, Claims 1-12 in the reply filed on 5 May 2006 is acknowledged.

### ***Status of the Claims***

2. The amendments submitted in papers filed 5 May 2006 are acknowledged. Claims 3, 15, 19 were amended and Claim 21 was added.

The amendments have been thoroughly reviewed and entered.

Claims 13-20 are withdrawn

Claims 1-12 and 21 are under prosecution.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-12 are indefinite in Claim 1, lines 7-8 for the recitation "said microporous bottom" because the recitation lacks proper antecedent basis in the "microporous material" of line 6. It is suggested that the claim be amended to provide proper antecedent basis e.g. replace "bottom" with "material".

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 4-5, 7-9, 11-12 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Aysta et al (U.S. Patent No. 5,264,184, issued 23 November 1993).

Regarding Claim 1, Astya et al disclose a device for holding a liquid solution and allowing the reaction of immobilized biological material (Abstract), the device comprising a plate (i.e. frame member #52 & rectangular block #54) in which are formed a group of wells which extend completely therethrough (i.e. sample container #12) and wherein the walls are substantially liquid impervious, a microporous material closing the bottom of the well (i.e. frit/separation layer #28) and at least one spot of a polymer attached to the upper surface of the microporous material (silica gel, dextran or agarose, Column 5, lines 49-63), the polymer being a crosslinked hydrogel having biological material so immobilized on and/or within the hydrogel so as to be contactable by a liquid (Abstract; Column 5, lines 1-12; and Column 6, lines 61-68).

Regarding Claim 4, Astya et al disclose the device comprising a group of wells arranged in a regular array i.e. matrix (Column 4, lines 48-54).

Regarding Claim 5, Astya et al disclose the device wherein at least some of the wells contain different biological materials (Abstract; Column 6, lines 13-17 and 65-68).

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Regarding Claim 7, Astya et al disclose the device wherein the microporous material is hydrophobic (e.g. PE or PTFE, column 5, lines 60-63) and the solution remains within the wells until a vacuum is applied to the undersurface (Column 2, lines 35-50).

Regarding Claim 8, Astya et al disclose the device wherein the average pore size is not greater than 1µm (Column 5, line 62).

Regarding Claim 9, Astya et al disclose the device wherein the biological material is DNA, RNA or proteins (Column 6, lines 65-68).

Regarding Claim 11, Astya et al disclose the device wherein the microporous material comprises PE or PTFE and has an average pore size not greater than 1µm (Column 5, lines 60-67).

Regarding Claim 12, Astya et al disclose the device wherein the microporous material is fused (i.e. sealed) to the undersurface of the plate to render the material impermeable except for those regions aligned with the wells (i.e. the separation layer is sealed to the well via retaining-ring #30, Column 6, lines 61-68).

Regarding Claim 21, Astya et al disclose a multiwell device for holding a liquid solution and allowing the reaction of immobilized biological material (Abstract), the device comprising a flat plate (i.e. frame member #52 & rectangular block #54) in which are formed a group of wells which extend completely therethrough (i.e. sample container #12) and wherein the walls are substantially liquid impervious, a microporous material closing the bottom of the well (i.e. frit/separation layer #28) and at least one spot of a polymer attached to the upper surface of the microporous material (silica gel, dextran or agarose, Column 5, lines 49-63), the polymer being a crosslinked hydrogel having biological material so immobilized on and/or within the hydrogel so as to be contactable by a liquid (Abstract; Column 5, lines 1-12; and Column 6, lines 61-68).

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7. Claims 1, 4, 5, 8, 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson et al (U.S. Patent No. 6,372,813, filed 25 June 1999).

Regarding Claim 1, Johnson et al disclose a device for holding a liquid solution and allowing the reaction of immobilized biological material (Abstract), the device comprising a plate (i.e. solid support) in which are formed a group of wells which extend completely therethrough (i.e. through the length of the microwell) and wherein the walls are substantially liquid impervious, a microporous material closing the bottom of the well (i.e. hydrogel within the well, forms a bottom of the well) and at least one spot of a polymer attached to the upper surface of the microporous material, the polymer being a crosslinked hydrogel having biological material so immobilized on and/or within the hydrogel so as to be contactable by a liquid (Abstract; Column 4, lines 24-67; Column 6, lines 23-24; and Column 7, lines 17-35).

The claim is drawn to a microporous material closing the bottom of each well. Johnson et al teaches a crosslinked hydrogel in a microwell. The hydrogel in a well forms a bottom of the well and is therefore encompassed by the claim. While the well, itself has a bottom; the claim does not limit the well to a single bottom. Furthermore, the instant claim language "comprising" encompasses any additional elements (e.g. gel that forms a second bottom within the well) taught by the reference. The multiwell plate having hydrogel of Johnson et al is encompassed by the instant claim.

Regarding Claim 4, Johnson et al disclose the device comprising a group of wells arranged in a regular array i.e. microwell (Column 6, lines 23-24 and Fig. 5).

Regarding Claim 5, Johnson et al disclose the device wherein at least some of the wells contain different biological materials (Column 6, lines 38-67 and Claim 8).

Regarding Claim 8, Johnson et al disclose the device wherein the average pore size is not greater than 1 $\mu$ m (Column 15, lines 2-4).

Regarding Claim 9, Johnson et al disclose the device wherein the biological material is DNA, RNA or proteins (Column 6, lines 38-50).

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8. Claims 1, 4, 5 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Blevins et al (U.S. Patent No. 6,200,533, filed 21 December 1998).

Regarding Claim 1, Blevins et al disclose a device for holding a liquid solution and allowing the reaction of immobilized biological material (Abstract), the device comprising a plate (i.e. unitary tray) in which are formed a group of wells which extend completely therethrough (Fig. 1-6), the walls are substantially liquid impervious, a microporous material closing the bottom of the well (e.g. glass fibers) and at least one spot of a polymer attached to the upper surface of the microporous material, the polymer being a crosslinked hydrogel having biological material so immobilized on and/or within the hydrogel so as to be contactable by a liquid (e.g. silica gel having organic moieties attached) (Abstract; Column 3, lines 1-41 and Fig. 6).

Regarding Claim 4, Blevins et al disclose the device comprising a group of wells arranged in a regular array (Fig. 1-3).

Regarding Claim 5, Blevins et al disclose the device wherein at least some of the wells contain different biological materials (Column 2, lines 32-35).

Regarding Claim 21, Blevins et al disclose a multiwell device for holding a liquid solution and allowing the reaction of immobilized biological material (Abstract), the device comprising a flat plate (i.e. unitary tray) in which are formed a group of wells which extend completely therethrough (Fig. 1-6), the walls are substantially liquid impervious, a microporous material closing the bottom of the well (e.g. glass fibers) and at least one spot of a polymer attached to the upper surface of the microporous material, the polymer being a crosslinked hydrogel having biological material so immobilized on and/or within the hydrogel so as to be contactable by a liquid (e.g. silica gel having organic moieties attached) (Abstract; Column 3, lines 1-41 and Fig. 6).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aysta et al (U.S. Patent No. 5,264,184, issued 23 November 1993) in view of Jones, Jr. et al (U.S. Patent No. 3,939,105, issued 17 February 1976).

Regarding Claim 6, Astya et al disclose a device for holding a liquid solution and allowing the reaction of immobilized biological material (Abstract), the device comprising a plate (i.e. frame member #52 & rectangular block #54) in which are formed a group of wells which extend completely therethrough (i.e. sample container #12) and wherein the walls are substantially liquid impervious, a microporous material closing the bottom of the well (i.e. frit/separation layer #28) and at least one spot of a polymer attached to the upper surface of the microporous material (silica gel, dextran or agarose, Column 5, lines 49-63), the polymer being a crosslinked hydrogel having biological material so immobilized on and/or within the hydrogel so as to be contactable by a liquid (Abstract; Column 5, lines 1-12; and Column 6, lines 61-68).

Astya et al teach the separation layer comprises gel, dextran or agarose having affinity ligands attached (Column 5, lines 1-12 and 60-62) but they are silent regarding the claimed hydrogel composition. However, hydrogels having iso-cyanate-functional prepolymers comprising a glycol were well known in the hydrogel art at the time the claimed invention was made as taught by Jones. Jones et al teach the claimed hydrogel provides a microporous gel for crosslinking polyamines (Abstract and Column 1, line 57-Column 2, line 2 and Column 3, lines 60-68 and Column 4, lines 46-60). It would have been obvious to one of ordinary skill in



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the art at the time the claimed invention was made to apply the crosslinked hydrogel of Jones et al to the gel matrix of Astya et al. One of ordinary skill in the art would have been motivated to do so for the expected benefit of providing a microporous hydrogel (Abstract).

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aysta et al (U.S. Patent No. 5,264,184, issued 23 November 1993) in view of Schiff et al (U.S. Patent No. 4,921,809, issued 1 May 1990).

Regarding Claim 10, Aysta et al is silent regarding the composition of the plate. However, polystyrene plates were well known, routinely practiced and preferred in the art at the time the claimed invention was made as taught by Schiff et al (Column 4, lines 5-29). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the well-known and preferred polystyrene plates of Schiff et al to the plates of Aysta et al. One of ordinary skill in the art would have been motivated to do so with a reasonable expectation of success based on its well known use and preference in the art (Schiff et al; Column 4, lines 5-29).

#### ***Allowable Subject Matter***

12. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **Conclusion**

13. No claims are allowed.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

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BJ Forman, Ph.D.  
Primary Examiner  
Art Unit: 1634  
July 13, 2006